

Indiana Department of Natural Resources
Division of Forestry
DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: Owen-Putnam	Compartment: 4	Tract: 12
Forester: N. Fishburn (R. Duncan)	Date: July 2013	
Management Cycle End Year: 2033	Management Cycle Length: 20 Years	

Location

Compartment 4, tract 12 is located in the southern part of section 9 and the northern part of section 16, township 11N, range 4W, Jackson, Jennings, and Morgan Townships, Owen County, Indiana. It is approximately 3 ½ miles Southwest of the town of Cataract.

General Description

This tract is a 77-acre sustainably managed, multiple use parcel located in the northern part of the 1440 acres contained in compartment 4 of the Owen-Putnam State Forest. Timber types include closed canopy oak-hickory, beech-maple, mixed hardwoods and pine. This area exhibits good opportunities for multiple use management, including timber management, wildlife management, and soil, air and water conservation. It is also a good area for public recreational activities, including hunting, fishing, hiking, gathering, viewing and interpretation. Because of its close proximity to roads and parking it is an ideal spot for anyone looking for a more accessible outdoor experience. Rattlesnake campground is located in the east part of this tract.

History

Owen-Putnam State Forest was established in 1948 with most of its landholdings purchased as smaller non-contiguous tracts in the 1950's and 60's. Compartment 4 tract 12 has been managed for several years. This tract was created out of several land purchases. In 1953, 60 acres of land was purchased from John and Pauline Dowdall. In 1959, 160 acres of land was purchased from Charles and Nettie Dale. In 1963, 160 acres of land was purchased from Allen and Anna Mae Milliner.

- Property wide timber inventory (TIMPIS) in 1988
- Timber inventory in 2005
- Timber inventory in 2010

Landscape Context

Compartment 4 tract 12 is located in a very rural area surrounded entirely by state forest land. Predominantly the land in this area is closed canopy deciduous forests, with few residences including some small fields/pastures and small ponds located primarily along county roads well beyond the state forest.

Topography, Geology and Hydrology

This part of Owen-Putnam State Forest falls in the Shawnee Hills Natural Region, Crawford Upland Section. The region represents presettlement conditions better than any other region in Indiana. This section is most distinct by its rugged hills with sandstone cliffs and rock shelters. Characteristic soils are the well-drained acidic

silt loams of the Wellston-Zanesville-Berks Association. The upper slopes consist of an oak-hickory assortment, with a more mesic component in the coves resembling the mixed mesophytic forest community (Homoya et al. 1985).

The topography of this tract varies from level ground on the ridge top, located in the southwest and southeast parts of the tract, to moderate to steep slopes making up the remainder of the tract. Generally, the slopes run from northwest to northeast with aspects facing northwest to northeast. Water sheds generally from south to north through ephemeral drains to a mapped intermittent stream. There is a small fishable pond located in the tract. Generally the soils are composed of very deep, somewhat poorly drained to well drained soils on low to steep slopes underlain with sandstone, siltstone and shale. These soils occur throughout the Illinoian glaciated areas of the county. The soils are comprised of a variety of types. The dominant soils are of the Tulip, Tipsaw, Zanesville, Hickory and Wellston series. In the event of a harvest, the existing trail system and log yards will be utilized, eliminating the need for new trail construction and minimizing soil disturbance. Indiana Logging and Forestry Best Management Practices (B.M.P.s) will be followed to preserve soil and water quality.

Soils

The tract is composed of the following soils from most to least abundant:

- **TtaG—Tulip-Tipsaw complex**, 25 to 60 percent slopes, *Setting*: Structural benches and scarps underlain with interbedded sandstone, shale, and siltstone, *Position*: Backslopes and footslopes, *Site Index*: Upland oak 70-80
- **ZamC3—Zanesville silt loam, soft bedrock substratum**, 6 to 12 percent slopes, severely eroded, *Setting*: Hills underlain with interbedded sandstone, shale, and siltstone, *Position*: Shoulders and backslopes, *Site Index*: Upland oak 69-75
- **HeuE—Hickory-Wellston silt loams**, 18 to 25 percent slopes, *Setting*: Dissected till plains over interbedded shale, siltstone, and sandstone, *Position*: Backslopes, *Site Index*: Upland oak 85
- **PryB—Potawatomi silt loam**, 1 to 3 percent slopes, *Setting*: Hills underlain with interbedded sandstone, shale, and siltstone, *Position*: Summits, *Site Index*: Upland oak 80
- **ZapD3—Zanesville, soft bedrock substratum-Tulip silt loams**, 12 to 18 percent slopes, severely eroded, *Setting*: Hills underlain with interbedded sandstone, shale, and siltstone, *Position*: Backslopes, *Site Index*: Upland oak 69-75
- **HleAV—Holton silt loam**, 0 to 2 percent slopes, frequently flooded, very brief duration, *Setting*: Flood plains, *Position*: Flood-plain steps, *Site Index*: Upland oak 80
- **ZamB2—Zanesville silt loam**, soft bedrock substratum, 2 to 6 percent slopes, eroded, *Setting*: Hills underlain with interbedded sandstone, shale, and siltstone, *Position*: Shoulders and summits, *Site Index*: Upland oak 69-75

Access

To access the tract from Spencer, travel west on S.R. 46 approximately 4 miles to Rattlesnake road, continue north on Rattlesnake road approximately 6 miles to Surber road, continue west on Surber road approximately 3 miles to the Rattlesnake campground which is located within compartment 4 tract 12. Management access as well as public recreational access to this tract is very good via the campground and fire trail located within.

Boundary

This tract is surrounded entirely by other tracts of the same compartment. The northeast boundary is adjacent to compartment 4 tract 11. The southeast boundary is adjacent to compartment 4 tract 16. The south boundary is adjacent to compartment 4 tract 13. The southwest boundary is adjacent to compartment 4 tract 8. The northwest boundary is adjacent to compartment 4 tract 7.

Wildlife

Wildlife resources in compartment 4 tract 12 seem abundant. Common species or sign observed include Eastern grey squirrel, Eastern fox squirrel, Eastern chipmunk, white-tailed deer, Wild Turkey, Virginia opossum, North American raccoon, Eastern box turtle, raptors, songbirds, woodpeckers, toads, frogs and various small stream aquatic life. This tract contains habitat for a variety of wildlife species.

Live trees in this tract provide for shelter, escape cover, roosting and as a direct (e.g. mast, foliage) or indirect (e.g. foraging substrate, bugging) food resource, with the oaks, hickories, walnuts and beech providing hard mast for deer, turkey and squirrel and the cherries providing soft mast for birds.

Live trees containing cavities in this tract provide nesting and denning opportunities for woodpeckers, songbirds and small mammals and potentially contribute to future snags (standing dead trees).

Snags in this tract provide essential habitat characteristics for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting, and are important contributors to the future pool of downed woody material.

Rotten logs, crater knolls, ephemeral streams, the mapped intermittent stream and fishing pond provide habitat for herptiles and aquatic vertebrates.

The proposed management activities for this tract should not significantly alter the relative proportion and availability of habitat/cover types or significantly disrupt travel/dispersal corridors or create isolated habitat units separated from larger units of similar habitat. Nor should the proposed management activities increase the likelihood that specialist interior forest species would be affected by generalist species using forest edge habitats. Indiana Logging and Forestry Best Management Practices (B.M.P.s) will be followed to conserve soil and water resources and related forest wildlife habitats, such as springs/seeps, ponds/wetlands and karst features.

Wildlife Habitat Features

According to the data collected during the tract inventory (J. Dye 2010) and represented in the following table, this tract is somewhat well represented with habitat in regards to the density, size and species of live and dead trees essential for consideration of various wildlife habitat needs including habitat specialists such as cavity nesters and Species of Greatest Conservation Need like the Indiana bat (*Myotis sodalis*) and their suggested habitat requirements.

Legacy trees, as defined by the Management Guidelines for Compartment-Level Wildlife Habitat Features are well represented above the suggested maintenance levels. White oak and shagbark hickory are two tree species having preferred characteristics for tree roosting bats. White oak and shagbark hickory are fairly abundant and will be given consideration for habitat. Also, as the tract continues to mature, the numbers of $\geq 20''$ D.B.H. legacy trees are expected to rise.

Standing dead or dying trees (snags) are somewhat well represented in this tract. The snags in the small and medium size classes are above the maintenance and optimal levels, but the snags in the $\geq 19''$ D.B.H. class are below the maintenance and optimal level. The lack of large diameter snags is often attributable to the overall

good health of the forest and the short retention of large standing dead trees. Snags have short standing times and often become wind thrown.

Cavity trees are somewhat well represented in all diameter classes at the maintenance and optimal levels. Cavity trees are above maintenance, but below optimal levels in all D.B.H classes. Representation could be lower than actual, due to inventory being conducted during leaf on, which can impede vision. Snags and legacy trees should develop cavities in time.

Legacy trees, snags and cavity trees will be given consideration for retention as habitat for the Indiana bat and other wildlife as defined by the Resource Management Strategy for the Indiana Bat on State Forest Property and the Management Guidelines for Compartment-Level Wildlife Habitat Features. In addition, the girdling of select cull trees could be performed through post harvest timber stand improvement (T.S.I.) to address the lack of large diameter snags.

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	693		1593	900	
20"+ DBH	231		428	197	
Snags (all species)					
5"+ DBH	308	539	1776	1468	1237
9"+ DBH	231	462	698	467	236
19"+ DBH	38.5	77	35	-4	-42
Cavity Trees (all species)					
7"+ DBH	308	462	459	151	-3
11"+ DBH	231	308	271	40	-37
19"+ DBH	38.5	77	51	13	-26

* Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

Communities

Most of this tract is of the dry-mesic upland forest community type, with some isolated more mesic sites located along lower north slopes, and some floodplain along streams. The dry-mesic upland forest community has moderate soil moisture with trees growing well, however the canopy is usually more open than in mesic forests. It is one of the most prevalent forest communities in Indiana. It occurs on slopes throughout the state. The dominant plants in this community are the white oak (*Quercus alba*), Northern red oak (*Quercus rubra*) and black oak (*Quercus velutina*). Characteristic plants in this community are the shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), flowering dogwood (*Cornus florida*), hop hornbeam (*Ostrya virginiana*) and black haw (*Viburnum prunifolium*). Characteristic animals in this community are the broad-headed skink (*Eumeces laticeps*), white-footed mouse (*Peromyscus leucopus*) and eastern chipmunk (*Tamias striatus*) (Jacquart et al. 2002).

A Natural Heritage Database Review is part of the management planning process. If Rare, Threatened or Endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

An exotic/invasive species, multi-flora rose (*Rosa multiflora*), is present in and around this tract in patches of light to moderate densities. Control measures should be considered, possibly during post-harvest T.S.I., whereby mechanical methods and herbicides could be applied to treat problem occurrences.

Recreation

This tract is a 77-acre sustainably managed, multiple use parcel located in the east part of the 1440 acres contained in compartment 4 of the Owen-Putnam State Forest. Public access to this tract is very good. This tract can be accessed through the cable gate and fire trail, located in the campground within compartment 4 tract 12. It is a good tract for public recreational activities including camping, hunting, hiking, fishing, gathering, viewing and interpretation. Because Rattlesnake campground is located inside the tract, it is an ideal spot for anyone looking for an accessible outdoor experience.

Cultural

Cultural resources may be present, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during management or construction activities.

Tract Description and Silvicultural Prescription

This tract was not subdivided (non-stratified).

In 1988 a property wide timber inventory (TIMPIS) was conducted, including compartment 4 tract 12 (M. Calvert). The results estimated the tract to contain 4,950 bd. ft. of total sawtimber per acre, including 1,559 bd. ft. of harvest sawtimber per acre with a total basal area (trees \geq 6" d.b.h.) of 92 sq. ft. per acre and 149 trees \geq 6" d.b.h. per acre.

In 2005 a routine timber inventory was conducted (R. Duncan). The data estimated the tract to contain 8,004 bd. ft. of total sawtimber per acre, including 4,169 bd. ft. of harvest sawtimber per acre with 138 sq. ft of total basal area per acre and

In 2010 a routine timber inventory was conducted (J. Dye). The data estimated the tract to contain 11,387 bd. ft. of total sawtimber per acre, including 2,924 bd. ft. of harvest sawtimber per acre with 130 sq. ft of total basal area per acre and a stocking level of 109 %. While harvest volumes differ in the 2005 and 2010 inventories the data clearly indicate overstocked conditions with harvest volumes in range of 3,000-4,000 bd.ft./acre.

Various timber types can be found on this tract. They are oak-hickory, beech-maple, mixed hardwood and pine. The over-story consists mostly of medium to large sawlog sized yellow poplar, hickory, oak, sugar maple, American beech, black locust, and sassafras, with Eastern white pine and Virginia pine present in the pine stands over-story. The quality of merchantable timber is good with the ridge tops and upper slopes containing more of the mixed hardwoods, and the mid to lower slopes containing more of the oak-hickory. The pole-sized under-story consists mostly of sugar maple, yellow-poplar, sassafras, American beech, and red maple with Scots pine and Eastern white pine poles present in the pine stands. Advanced regeneration is represented mostly by American beech, white ash, pawpaw, sassafras, yellow-poplar, and sugar maple with some oak and hickory present. Oak regeneration was well represented in the advanced stages in some areas. Management should include the release of advance regeneration by providing sunlight and space.

Estimated Tract Volumes for Commercial Forest Area – Bd.Ft. Doyle Rule

* Slight approximation due to software rounding

Species	Harvest Stock	Growing Stock	Total Volume
YEP	1026	2454	3480
BLO	618	1128	1745
SHH	78	987	1065
REO	150	738	888
SUM	201	650	851
WHP	204	585	789
PIH	156	508	664
WHO	0	489	489
SCP	86	228	315
MOH	0	315	315
REM	126	73	198
AMB	10	178	188
SAS	107	32	139
BLL	86	0	86
BLW	77	0	77
REE	0	65	65
BIH	0	33	33
*Per Acre Total	2,924	8,463	11,387
*Tract Total	225,160	651,630	876,790

Proposed Management Activities

2010 ----- Timber Inventory
 2013 ----- Resource Management Guide
 2013 ----- DHPA Archaeological Clearance Application
 2013/14 ----- Timber Marking and Sale Layout
 2013/14 ----- Timber Sale/Harvest
 2014/15 ----- Post-Harvest TSI and Exotic/Invasive Control
 2014 ----- BMP Monitoring
 2030 ----- Timber Inventory
 2033 ----- Resource Management Guide

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